

## CLAIMS

1. A gene transfer vector containing a virus envelope.
- 5 2. A gene transfer vector according to claim 1, wherein the virus is derived from a wild-type virus or a recombinant-type virus.
3. A gene transfer vector according to claim 1 or 2,  
10 wherein the virus is derived from a virus belonging to a family selected from the group consisting of:  
Retroviridae, Togaviridae, Coronaviridae,  
Flaviviridae, Paramyxoviridae, Orthomyxoviridae,  
Bunyaviridae, Rhabdoviridae, Poxviridae,  
15 Herpesviridae, Baculoviridae, and Hepadnaviridae.
4. A gene transfer vector according to claim 3, wherein the virus is HVJ.
- 20 5. A gene transfer vector according to any one of claims 1 to 4, wherein the gene transfer vector is prepared by a method which comprises the steps of:  
mixing the virus with an exogenous gene; and  
freezing and thawing the mixture two or more times.
- 25 6. A gene transfer vector according to any one of claims 1 to 4, wherein the vector is prepared by a method which comprises a step of mixing the virus with an exogenous gene in the presence of a detergent.
- 30 7. A gene transfer vector according to claim 5 or 6, wherein the method further comprises a step of inactivating the virus.

8. A gene transfer vector according to claim 7, wherein the detergent is selected from the group consisting of octylglucoside, Triton-X100, CHAPS and NP-40.

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9. A gene transfer vector according to claim 8, wherein the detergent is octylglucoside.

10. A gene transfer vector according to any one of claims 1 to 9, wherein the method further comprises a step of adding protamine sulfate to the exogenous gene.

11. A gene transfer vector according to any one of claims 1 to 10 for introducing a gene into animal in vivo tissue.

12. A gene transfer vector according to claim 11, wherein the tissue is selected from the group consisting of: the liver, skeletal muscles, the uterus, brain, eyes, carotid arteries, skin, blood vessels, the lung, the heart, kidneys, the spleen, cancer tissue, nerves, B lymphocytes, and respiratory tract tissue.

13. A pharmaceutical composition for gene therapy which comprises the gene transfer vector according to claims 1 to 12.

14. A kit for screening gene libraries, which comprises the gene transfer vector according to claims 1 to 12.

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15. A method for preparing a gene transfer vector comprising a virus envelope for gene transfer, wherein the method comprises the steps of:

mixing the virus with an exogenous gene; and  
freezing and thawing the mixture two or more times.

16. A method for preparing a gene transfer vector  
5 comprising a virus envelope for gene transfer, wherein  
the method comprises the steps of:

mixing the virus with an exogenous gene in the presence  
of a detergent.

- 10 17. A method according to claim 15 or 16, further  
comprising the steps of inactivating the virus.

18. A method for introducing a gene into isolated animal  
tissue, wherein the method comprises the steps of:

- 15 preparing a gene transfer vector according to any one  
of claims 1 to 12, containing a desired exogenous gene;  
and

introducing a gene into the isolated animal tissue  
via the gene transfer vector.

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19. A method for introducing an exogenous gene into a  
suspended cell, wherein the method comprises the steps  
of:

- mixing the suspended cell with the gene transfer  
25 vector according to any one of claims 1 to 12 in the  
presence of protamine sulfate; and  
centrifuging the mixture.